

MONTHLY WEATHER REVIEW.

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INTRODUCTION.

This REVIEW contains a general summary of the meteorological conditions which prevailed over the United States and Canada during July, 1885, based upon the reports from the regular and voluntary observers of the Signal Service and from co-operating state weather services.

Descriptions of the storms which occurred over the north Atlantic ocean during the month are also given, and their approximate paths shown on chart i.

July, 1885, like the preceding month, has not been marked by any abnormal meteorological features.

On chart i. are traced the paths of nine atmospheric depressions; these, with four minor depressions (not charted), are described under "Areas of low barometer." The average number of depressions charted for July during the last twelve years corresponds with the number for July of the current year.

The most violent and destructive local storms of the month occurred in Minnesota, Wisconsin and Michigan, on the 8th, during the prevalence of low area iii.

The mean temperature in all districts corresponds very nearly with the July normal.

Marked deficiencies in the monthly precipitation occurred on the Atlantic coast and in the Ohio valley; in the district last named and in New England the average precipitation was about one-half the normal amount. In other districts the average precipitation, as compared with the normal, shows no decided excess or deficiency, although at certain stations the departures, both above and below the normal, were quite marked.

Over the north Atlantic ocean the weather was generally pleasant, the month being free from violent storms.

The area of the region covered by icebergs in the north Atlantic is less than in the preceding month; these dangers to navigation now seem to be disappearing.

In the preparation of this REVIEW the following data, received up to August 20th, 1885, have been used, viz.: the regular tri-daily weather-charts, containing data of simultaneous observations taken at one hundred and twenty-nine Signal Service stations and twenty-one Canadian stations, as telegraphed to this office; one hundred and fifty-six monthly journals and one hundred and sixty-two monthly means from the former, and twenty-one monthly means from the latter; two hundred and eighty-seven monthly registers from voluntary observers; reports from 1,421 special tornado observers; forty-six monthly registers from United States Army post surgeons; marine records; international simultaneous observations; marine reports through the co-operation of the "New York Herald Weather Service;" abstracts of ships' logs, furnished by the publishers of "The New York Maritime Register;" monthly weather reports from the local weather services of

Alabama, Ohio, Indiana, Missouri and Nebraska, and of the Central Pacific Railway Company; trustworthy newspaper extracts, and special reports.

ATMOSPHERIC PRESSURE.

[Expressed in inches and hundredths.]

The distribution of mean atmospheric pressure for July, 1885, determined from the tri-daily telegraphic observations of the Signal Service, is shown by the isobarometric lines on chart ii.

The mean pressure is least over the central and southern Rocky mountain regions, where the monthly barometric means range from 29.75 to 29.85, the lowest being reported from Fort Thomas, Arizona; it is greatest in the south Atlantic and Gulf states, and on the north Pacific coast, where the means range from 30.00 to 30.04, the highest occurring at Key West and Sanford, Florida, and Fort Canby and Tatoosh Island, Washington Territory.

As compared with the mean pressure for the preceding month, an increase is shown over the southern plateau, the eastern Rocky mountain slope, west Gulf states, southern Florida, northern New England, and the Maritime Provinces. Except over the Maritime Provinces and a part of the southern slope, where the increase varies from .05 to .07, the barometric means in the districts before-named range from .01 to .05 higher than those for June. In all other districts the pressure is lower than that for the preceding month, the deficiency exceeding .05 on the northern California coast, over the region to the north of the Ohio and Missouri rivers, and in the southern part of the middle Atlantic states.

The departures from the normal pressure at the various stations are given in the table of miscellaneous meteorological data; they are also shown on chart iv. by lines connecting stations of equal departure. It will be seen from the chart named that there are no marked departures from the normal. On the Atlantic coast, over portions of the northern slope and lake region, and in the southern districts from the Mississippi river to the Pacific coast, the pressure is slightly above the normal, the departures being generally less than .05. In the remaining districts slight deficiencies are shown, the maximum departures occurring over the extreme northwest and the north Pacific coast region, where they vary from .05 to .07.

MONTHLY BAROMETRIC RANGES.

The monthly ranges were greatest in the extreme northwest, Saint Vincent and Moorhead, Minnesota, reporting the maximum, .82; they were least in southern Florida and over the southwestern part of the country from the west Gulf states to the Pacific coast. The smallest monthly ranges are as follows: .16, at Fort Davis, Texas; .20, at Fort Grant, Arizona, and Fort Stockton, Texas; .23, at Key West, Florida. The monthly barometric ranges at the various Signal Service stations are given in the table of miscellaneous meteorological data.

AREAS OF HIGH BAROMETER.

I.—The feeble anti-cyclonic area over the upper Mississippi, Missouri, and Ohio valleys dominated the weather conditions during the 1st. During the 2d this area became central near Cairo, but moved to the south and east. During the 3d it pushed to the south Atlantic and east Gulf states, where it continued to rest during the 4th, with occasional rains in the Southern states on this date. The isobar of 30.00 inclosed this